NZGMDB Workflow Plan

Current State

Structure

Catalogue
find_clipped_data - Checks the flatfile for if there is likely to be clipping and outputs a csv with results
merge_all - Merges a bunch of dataframes and creates the flatfiles
relocated_to_qcore - merges relocation locations from Reyners and recalculates magnitude values and outputs a new merged file
sta_site_merge_2 - Merges station info from the FDSN Clients and the Geonet metadata summary file into 1 site_table_response csv
station_basins - Creates the site_table_basin csv but requires the Data/Basins .dats/txt

EQ
Af..._2016_Ds - Empirical Model for DS, outputs median Ds and sigma_Ds
calc_distance_gmdb - 800 lines of random functions with faults and distances (most may not even be used) At bottom calculates the earthquake source table and the propagation_path table csvs
geonet_to_gmdb - Does alot of work, computes SNR, creates the phase arrival table and creates the events and magnitude dataframes
mag_scaling - tons of different magniutde scaling functions, not a script
mseed_write_rrup - downloads mseed data for Geonet events, uses the empirical model, estimates P and S wave arrival times
src_site_dist - functions for backarc, rx_ry and rrup_rjb
tectclass_domain - Functions for faults, detemrines the tecttonic types for each record, creates the merged earthquake_source_table_tectdomain csv

Focal - Srf and rupture models

IM
concat_IMs - Merges all the ground_motion*final csvs to create the complete_ground_motion_im_catalogue_final csv, does some filtering based on score_mean, multi_mean and fmin_mean
gm_im_marge - Creates a Im catalogue (Seems to be the same filename as concat_IM's so unsure how they are meant to be used together but unsure if this script is run for a given year and mag range and then the above script is used to merge them together)
gmc_filter - Filters the records based on if the score_mean is above 0.5 and moves files around (alot of the code in here can be chopped out as it's not needed)
im_runner.sh - Runs IM calculation in bash for each event

Imaging - some jypter notebook

TecttonicDomians - contains the tecttonic type files used in tecttclass_domain script

Blocks of work and requirements

Pre Steps - Creating mseed files (None)
GMC - Classify records (mseed files)
Phase Arrival Creation - Finds phase arrival for records (mseeds)
Fmax creation - Computing SNR and then calculate fmax for each record (phase arrival table, ko matrices, mseeds)
Filter and Process - Filter based on GMC and process with detrending etc (GMC file, earthquakes.csv, mseed structure, fmax file)
IM Calc - calc over processed records (Filtered and processed records)
Flat File gen - Taking IM calc output and creating the Tables for final delivery by mixing source data and Im calc data (IM calc csvs, gmc file, fmax file, phase arrival table, source files as listed below)

Source Files

- clip table
- earthquake_source_table_complete
- station_magnitude_table
- propagation_path_table_complete
- site_table_basin